Complete Summary

GUIDELINE TITLE

HIV infection.

BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. HIV infection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2005 May 15 [Various].

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Finnish Medical Society Duodecim. HIV infection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd; 2004 Aug 12. various p.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Human immunodeficiency virus (HIV) infection

GUIDELINE CATEGORY

Counseling
Diagnosis
Management
Prevention
Treatment

CLINICAL SPECIALTY

Family Practice
Infectious Diseases
Internal Medicine
Preventive Medicine

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collect, summarize, and update the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.

TARGET POPULATION

Patients with suspected or known human immunodeficiency virus (HIV) infection

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Assessment of clinical signs and symptoms
2. HIV testing with patient consent:
    - HIV antibody test
    - HIV nucleic acid test

Counseling/Management/Prevention/Treatment

1. Patient education and counseling
2. Contact notification
3. Disease staging and assessment
4. Hepatitis testing and vaccination as indicated (If patient is intravenous drug user, commence hepatitis B vaccination programme)
5. Medication management with highly active antiretroviral therapy (HAART)
6. Referral for specialist care, when warranted
7. Terminal care including nursing services, hospice, or general hospital wards
8. Preventive measures for health care professionals
9. Post-exposure prophylaxis in cases of occupational exposure

Note: Guideline developers considered several other prevention and treatment practices. For a list of these, see "Related Evidence" in the original guideline document and the "Major Recommendations" field below.

MAJOR OUTCOMES CONSIDERED

- Virologic failure rates

- Diagnostic test accuracy
- Human immunodeficiency virus (HIV) prognosis, transmission, and incidence rates
- Rates of risk behaviour
- Incidence of opportunistic infections
- Mortality rates
- Quality of life and patient's ability to continue working

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the Database of Abstracts of Reviews of Effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

Basic Rules

- Identification of the HIV-infected persons is most essential.
- Suspect human immunodeficiency virus (HIV) infection on clinical grounds
    - In patients exposed to HIV infection in unprotected sex or via injections
    - In patients with a history of high-risk behaviour and who present with symptoms suggesting primary HIV infection
    - In patients with unexplained immunosuppression and in young individuals with weight loss, dementia or oesophageal candidiasis, thrombocytopenia or anaemia without a clear cause
- Antibodies will become positive in 1 to 4 months after contracting the infection. To exclude the possibility of HIV infection, the development of antibodies should be followed up until four months have elapsed. The primary symptoms may manifest primary 2 to 6 weeks after the transmission.
- There is no cure for HIV infection, but a combination therapy (highly active antiretroviral therapy [HAART]) has greatly improved the patients' outlook (Rutherford, Sangani, & Kennedy, 2003) [A].

Epidemiology

- According to WHO, in 2004 an estimated 5 million new infections with HIV were diagnosed worldwide, a total of 3 million people died of HIV/acquired immunodeficiency syndrome (AIDS)-related causes, and there were 40 million people living with HIV/AIDS.

Natural Course of HIV Infection

Primary Infection

- Primary HIV infection develops in 30 to 50% of infected patients, 2 to 6 weeks after contracting the virus.
- The symptoms may include fever, tiredness, sore throat, headache, diarrhoea, myalgia, arthralgia, and occasionally enlarged lymph nodes as well as an eruption of small papules on the body. Primary infection often resembles mononucleosis. The symptoms resolve within a month. Diagnosis is made difficult by the fact that during primary infection over 50% of the patients will be HIV antibody negative. The HIV antigen test and polymerase chain reaction (PCR) assay become positive at an earlier stage. A positive PCR assay warrants confirmation with other test methods at a later stage (Owens et al., 1996; DARE-968203, 1999) [C].

Asymptomatic Phase

- Lasts for several years, in some cases over 10 years
- A high viral load will hasten the disease progression.

Symptomatic HIV Infection

- CD4 cell count has often decreased to below 0.35×10^9/L.
- An increasing viral load is often predictive of symptom emergence.
- Symptoms are non-specific, such as weight loss, fever, and persistent diarrhoea.
- Herpes zoster (shingles), oropharyngeal candidiasis, and seborrhoeic eczema (see Picture 1 in the original guideline document) are also indicative of reduced immune response.

AIDS

- AIDS is defined as an HIV infection with at least one of the officially listed opportunistic diseases.
- The introduction of HAART has significantly reduced the occurrence of opportunistic diseases.
- The most common opportunistic diseases in Western Europe are:
    - Fungal oesophagitis or stomatitis
    - Infections caused by atypical mycobacteria (M. avium-intracellulare)
    - Pneumocystis carinii pneumonia
    - Kaposi's sarcoma
- Tuberculosis is common in the rest of the world.

Indications for an HIV Test

- An HIV test may be indicated particularly in the following clinical conditions:
    - There is a history of high-risk behaviour: unprotected sex with occasional partners or with prostitutes, or use of intravenous drugs
    - Sexually transmitted diseases
    - Fever, diarrhoea, weight loss, or dementia of unknown origin
    - Unexplained thrombocytopenia
    - Tuberculosis in a young or middle-aged person
    - Pneumonia caused by Pneumocystis jiroveci (opportunistic pneumonia typically presenting with slow onset, dyspnoea on exertion, hypoxaemia, and mild or moderate fever)
    - Widespread oral candidiasis associated with dysphagia or pain on swallowing (oesophageal candidiasis)
    - Kaposi's sarcoma (wine-red or violet spots or tumours in the palate, gums, or skin)
- HIV serology should always be tested on the patient's request.
- The patient should be asked for consent before HIV testing. If the patient declines the test, the problems and possible harm caused by the delayed diagnosis, both for the patient himself/herself, the treating personnel (extra investigations and prolonged treatment time), and other people (infection risk) should be further explored with the patient.

Diagnosis

- HIV antibody test. A positive sample is retested; if it remains positive the laboratory will request a further sample before submitting a result.
- The test will become positive 2 to 4 weeks after symptom onset or 1 to 4 months after contracting the virus.
- HIV nucleic acid test should be considered when strong suspicion of the infection exists in a patient with primary symptoms and if urgent diagnosis is required and the antibody test is negative.

Investigations and Patient Education in Primary Care

- Adequate time must be allocated for breaking the news of a positive test result. The patient should also be given contact details of how to obtain more information or moral support (AIDS help lines are available 24 hours a day).
- If the result is negative the patient should be given advice regarding high-risk behaviour and the possible need of a repeat test.
- Any unit carrying out HIV testing should be able to provide a patient whose HIV test result is positive with general information regarding the mode of HIV transmission, course of the disease, and the treatment choices available. The unit should also be prepared to answer any questions relating to daily hygiene needs, etc. (Wolitski et al., 1997; DARE-973563, 1999) [B].
- The disease staging and the assessment of an individual patient's prognosis, as well as the decision on specific drug therapies, are carried out by a specialist team.
- As soon as a positive test result is obtained, every effort should be made to identify and inform the patient's past contacts, who should be encouraged to agree to be tested.
- An official notification of an infectious disease should be made.
- If the patient is an intravenous drug user, a hepatitis B vaccination programme is commenced unless the patient has had the disease or has

already been vaccinated. Also the hepatitis C virus (HCV) antibodies should be investigated.
- The follow-up of the patient is usually undertaken by an infectious disease team.

Treatment

- See the National Guideline Clearinghouse (NGC) summary of the Centers for Disease Control and Prevention (CDC) guideline: Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents.

Specific Treatment with HIV Drugs

- Treatment of an HIV infection requires specialist skills, and the prescription and implementation of drug therapies should be undertaken only by those experienced in their use.
- The development of HIV drugs has significantly improved the prognosis of an HIV infection. No cure exists, but it may be possible to add several tens of years to the life expectancy of an HIV positive patient. Quality of life has also improved significantly as has the patients' ability to continue in working life.
- Indications for starting drug therapy for an HIV infection are:
    - Symptomatic disease (particularly if AIDS is diagnosed)
    - Asymptomatic disease, if CD4 cell count falls below 0.35×10^9/L
    - An HIV positive pregnant mother (to prevent vertical transmission) (Brocklehurst, 2002) [A]
- The treatment is carried out with the combination of at least three antiviral drugs (HAART) (Rutherford, Sangani, & Kennedy, 2003) [A].
- Once antiviral drug therapy has been started, its uninterrupted continuation is of vital importance.
    - Development of drug resistance and loss of efficacy may follow irregular adherence to therapy.
    - The treatment must not be interrupted without prior consultation with the treating physician.
    - HIV drugs interact with several other drugs. There is potential for too high or too low concentrations of either drug. Specialist consultation should always be sought in unclear cases.
- Patient compliance is the most important factor in successful drug therapy for HIV infection.
    - The patient is expected to take a large number of tablets, and adverse effects are common, particularly in the beginning.
    - To facilitate dosing at the same time every day may involve some lifestyle changes.
- In some countries all pregnant mothers are tested for HIV antibodies. An HIV positive pregnant mother should be referred to the care of a specialist team with expertise in HIV management.

HIV and the General Practitioner

- The asymptomatic phase lasts for a long time, and the correct timing of the specific antiviral drugs effectively reduces the occurrence of opportunistic diseases. These patients will visit their general practitioner (GP) more often

than before with common infections, skin or dental problems, or with problems totally unrelated to their positive HIV status.
    - When an HIV positive patient presents with a febrile illness, the treating specialist unit should be consulted over the telephone in all unclear cases, particularly if antiretroviral medication has been introduced.
    - Abnormal headache, paralysis, impaired consciousness, or visual disturbances in an HIV positive patient always warrant an immediate referral to specialist care for further investigations.
- HIV is not curable with current drug therapies, and the introduction of terminal care may have to be broached at some stage. The options include home nursing services, hospices, or general hospital wards. The situation should be anticipated in good time to allow the appropriate staff time to undertake any additional training.

The Working Capacity of HIV Carriers

- During the asymptomatic phase, the working capacity of the patient usually remains normal.
- The decreased working capacity during primary infection is transient. AIDS might cause permanent loss of working capacity or it may be restored by antiviral treatment.
- Infection risk does not usually contribute towards the patient's inability to work.

Guidelines for Health Care Professionals

- When exposure to blood is a possibility, gloves and a facial shield covering the eyes should be worn.
- Gloves should be worn when taking blood samples, but there is no need to wear a facial shield (if vacuum tubes are used).
- Particular attention should be paid to following recommended procedures in order to avoid needle stick injuries.

Post-Exposure Prophylaxis in an Occupational Setting

- The risk of infection is very small. After verified HIV exposures associated with needle stick injuries, the risk has been around 0.1 percent.
- In percutaneous exposure, where the source patient is known to be HIV positive, prophylaxis is recommended with a combination of three drugs for four weeks. The treatment should be started within two hours of the exposure, but it has an effect even when started within two days. Post-exposure prophylaxis has been found to be highly effective (Talbot, 2004) [B] but should be reserved for cases where the potential for infection transmission exists because of the potentially dangerous adverse effects. Prophylaxis after mucous membrane exposure is discretionary. An infectious disease physician should be consulted in uncertain cases and in order to obtain assistance in risk assessment.
- The decision about initiating post-exposure prophylaxis must be made by a physician with HIV experience. Health care staff must have access to post-exposure prophylaxis 24 hours a day.

- An HIV antibody test should be taken without delay and again after 1, 3, and 6 months.
- If antiviral medication was prescribed for prophylaxis, antibody testing may be continued for even longer.
- Official notification must always be made of a needle stick injury.
- During the follow-up period, a condom must be used during sexual intercourse (Weller & Davis, 2002) [B].

Related Evidence

- Needle exchange programmes are effective in reducing HIV incidence among injecting drug users (Hurley, Jolley, & Kaldor, 1997; DARE-978208) [C].
- Theory-driven, peer-led, multiple session behavioural interventions that address gender relationships are effective in increasing condom use (Wingood & DiClemente, 1996; DARE-961124, 1999; Exner, Seal, & Ehrhardt, 1997; DARE-985223, 2000) [A].
- Behavioural interventions (Kalichman, Carey, & Johnson, 1996; DARE-978428, 2000) [A] and school-based programmes have the potential to reduce sexual risk behaviours (Kirby et al., 1994; DARE-940275, 1999) [C].
- AIDS risk reduction interventions can be effective in improving knowledge, attitudes, and behavioural intentions and in reducing risk practices (Kim et al., 1997; DARE-970429, 1999) [A].
- Interventions targeting heterosexual men on HIV sexual risk can lead to decreases in HIV risk behaviour (Exner et al., 1999; DARE-20005273, 2002) [B].
- The single study on promoting adherence to HAART showed that education by pharmacist may improve compliance (Haddad et al, 2000) [C].
- Aerobic exercise appears to be safe and may be beneficial for persons with HIV/AIDS (Nixon et al., 2005) [C].
- Prophylactic drug therapy is effective in reducing incidence of tuberculosis in HIV infected adults with a positive tuberculin skin test (Woldehanna & Volmink, 2004; Bucher et al., 1999; DARE-993945, 2001) [A].
- Cotrimoxazole is effective in reducing mortality and preventing illness in patients with HIV infection in Africa (Grimwade & Swingler, 2003) [B].
- Spermicide nonoxynol-9 is not effective in preventing vaginal acquisition of HIV infection and it may do harm by increasing the frequency of genital lesions (Wilkinson et al., 2002) [A].
- Methadone maintenance treatment appears to reduce HIV risk behaviour and prevent HIV infection (Sorensen & Copeland, 2000; DARE-20003645, 2002) [B].
- Alitretinoin gel is effective in treating cutaneous Kaposi's sarcoma (KS), pegylated liposomal doxorubicin (PLD) is effective treatment for advanced Kaposi's sarcoma, and radiotherapy appears effective in treating cutaneous lesions (Dedicoat, Vaithilingum, & Newton, 2003) [A].
- Antifungal primary prophylaxis with either itraconazole or fluconazole is effective in reducing the incidence of cryptococcal disease in adults with advanced HIV disease but seems not to affect overall mortality (Chang et al., 2005) [A].

Definitions:

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate diagnosis, treatment, and management of human immunodeficiency virus (HIV) infection
- The development of HIV drugs has significantly improved the prognosis of an HIV infection. No cure exists, but it may be possible to add several tens of years to the life expectancy of an HIV positive patient. Quality of life has also improved significantly as has the patients' ability to continue in working life.

POTENTIAL HARMS

Hepatitis and pancytopenia may rarely occur in patients taking combined postexposure prophylaxis.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. HIV infection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2005 May 15 [Various].

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Aug 12 (revised 2005 May 15)

GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Janne Laine; Janne Mikkola

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Finnish Medical Society Duodecim. HIV infection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd; 2004 Aug 12. various p.

GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: info@ebm-guidelines.com; Web site: www.ebm-guidelines.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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